

The Files (Trip Report)

26 September 1956

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RETMA Conference on Reliable Electrical Connections

1. On September 11 and 12 I attended the second RETMA Conference on Electrical Connections. This conference was held in Philadelphia at the University of Pennsylvania.

2. The first half of the conference was devoted almost entirely to the subject of making reliable solder connections. All of the various soldering techniques were covered from a production standpoint. It was concluded that the most serious obstacle to good solder joints is the human element. To overcome this limitation in production much emphasis was placed on automatic soldering techniques and solderless connectors. No general standards have been established by the manufacturers but attempts are being made to gather information from each manufacturer in an effort to establish standard methods to be used in automatic soldering techniques.

3. The second part of the conference discussed solderless connectors. The main advantage in this type connection, aside from being cheaper, is a very uniform connection. The latest type of solderless connector is the taper pin. This connector consists of a tapered pin, with a hole for wire, and a socket. The pin is driven into the socket with a small impact tool. Lockheed makes 130 million connections each year with this type connector. Bell Telephone has had good results with the wrapped wire solderless connector and some television manufacturers are now using the technique. Another type solderless connector is being used in a coaxial cable connector. This connector uses a hardened sleeve between the insulation and braid and a softer sleeve over the braid. The connection is made by a pressure tool designed with a ratchet so that once the stroke is started it must be completed before the tool will release. This connector has passed all military specifications. It is made by Thomas & Betts Company, Inc., 36 Butler Street, Elizabeth 1, New Jersey.

4. It is very evident that more and more attention is being placed on automatic methods of making electrical connections. When soldered connections must be made the automatic methods of induction heating, dip-soldering, etc., are most desirable; however, the trend is to use solderless connectors where possible.

5. All of the above methods of making solderless connections are primarily applicable to production work; however, some of them may be profitably used in the Laboratory, especially the new solderless coaxial connectors.

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